

**REMARKS**

Reconsideration of the above-identified application in view of the foregoing amendments and following remarks is respectfully requested.

A. Claim Status / Explanation of Amendments

Claims 1-4, 7, and 15-19 are pending and were rejected pursuant to 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 6,500,537 to Araki, et al. ("Araki") in view of Japanese Patent No. JP 01255798 to Kobayashi, et al. ("Kobayashi"). [12/28/07 Office Action, p. 2].

By this paper claims 1-4, 7, and 15-19 are amended and new claims 20-21 are added. Claim 1 is amended to recite, *inter alia*, a "wear resistant and seizure resistant film formed on a sliding part" and that "the solid lubricant, the titanium oxide powder and the silane coupling agent are dispersed in the binder resin of the film." Claims 2-4, 7, and 15-19 are amended to correct for antecedent basis. Support for the amendments to claim 1 may be found throughout the application as originally filed including, for example, p. 3, lns. 1-27, p. 7, lns. 19-35, and p. 18-19.

New claim 20 includes all elements of amended claim 1 and further recites that the film is formed by "mixing the coating composition by a solvent, applying the mixed composition to the sliding part, and heating the sliding part having the mixed composition applied thereto to cure the binder resin." New claim 21 recites a method of manufacturing the film of claim 1. Support for new claims 20-21 may be found, for example, in p. 7, lns. 19-35 and p. 8.

No new matter will be introduced into this application by entry of these amendments. Entry is respectfully requested.

B. Claims 1-4, 7, and 15-19 are Patentable over Araki in view of Kobayashi

Applicants respectfully traverse the rejection of claims 1-4, 7, and 15-19 under 35 U.S.C. § 103(a) as allegedly being unpatentable for obviousness. As set forth in detail below, Araki and Kobayashi, whether alone or in combination, do not teach, disclose, or suggest each and every element of these claims. Accordingly, the Section 103 rejection is respectfully traversed.

Applicants' claim 1, as amended, recites:

1. A wear resistant and seizure resistant film formed on a sliding part, wherein the film is formed of a coating composition comprising a binder resin, which is polyimide or polyamide-imide, a solid lubricant of polytetrafluoroethylene in an amount of from 15% by mass to 100% by mass based on 100% by mass of the binder resin, titanium oxide powder in an amount of from 5% by mass to 35% by mass based on 100% by mass of the binder resin, and a silane coupling agent in an amount of from 0.1% by mass to 10% by mass based on 100% by mass of the binder resin, the solid lubricant, the titanium oxide powder and the silane coupling agent being dispersed in the binder resin of the film.

Araki is directed to a non-stick composite material for use in office automation equipment with, *inter alia*, improved adhesion to a substrate, better stain-proofing, as well as enhanced heat, chemical, and abrasion resistance. [Araki, Abstract]. Applicants, however, are directed to a "wear resistant and seizure resistant film formed on a sliding part" as recited in amended claim 1. The Office Action contends that the above element is drawn to an amendment which has not been entered. [3/19/08 Advisory Action, p. 3, item 5]. Applicants submit herewith a Request for Continued Examination in order to have the amendment entered. Consequently Araki fails to disclose a "wear resistant and seizure resistant film formed on a sliding part" as required in amended claim 1. In addition to the above distinction, Applicants respectfully assert that claim 1, as amended, is patentable over Araki and Kobayashi for the following additional, independent reasons.

As previously asserted in Applicants' replies dated October 11, 2007 and February 28, 2008, Araki fails to disclose that the fluorine-containing polymer (e.g., the composite material) which contains polyimide or polyamide-imide as the binder resin is formed on a sliding part. Rather, Araki merely discloses the application of the fluorine-containing polymer to a substrate fabricated from polyimide or polyamide-imide. Since Araki's coating composition does not contain polyimide or polyamide-imide as the binder resin, Araki does not, in fact, teach a film formed on a sliding part which comprises all the elements of claim 1.

In response to Applicants' arguments as presented above, the Office Action contends that "said substrate has all the components of the composition claimed" and that "Araki et al., in multiple places, refer to a film or coating made up of fluorine-containing compound (PTFE) and other components (column 17, lines 10-14; column 22)." [3/18/08 Advisory Action, p. 5, item 9]. However, as already noted, Araki's polyimide or polyamide-imide-containing substrate does not constitute a film "formed of a coating composition comprising a binder resin, which is polyimide or polyamide-imide" as recited in Applicants' amended claim 1. The passage (col. 17, lns. 10-14) cited by the Office Action merely discloses that an amine compound, which may be added to the fluorine-containing rubber coating if so desired, functions primarily as a vulcanizing agent. Furthermore, Araki fails to teach or suggest that the "solid lubricant, the titanium oxide powder and the silane coupling agent [are] being dispersed in the binder resin of the film" as recited in amended claim 1.

As noted in Applicants' February 28, 2008 reply, the Office Action recognizes that Araki does not expressly disclose the amounts of PTFE, silane coupling agent, and titanium oxide powder as claimed by Applicants. [12/28/07 Office Action, p. 3-4]. The Office Action does, however, contend that "Araki et al. disclose the use of titanium oxide as a reinforcing agent or

for many other reasons in an amount not lowering characteristics of the film.” [3/18/08 Advisory Action, p. 3, item 6]. Applicants respectfully disagree and note that in col. 14, lns. 45-54 Araki merely discloses that titanium oxide is incorporated as a pigment. Applicants’ incorporation of “titanium oxide powder in an amount of from 5% by mass to 35% by mass based on 100% by mass of the binder resin” serves to improve the wear and seizure resistance of Applicants’ sliding film. Thus, Araki provides no teaching or suggestion for the incorporation of titanium oxide powders for anything other than providing color to the composite material.

In attempting to remedy deficiencies in Araki, the Office Action introduces Kobayashi which is directed to a high rigidity sliding material formed of a synthetic resin containing polyamide resin, titania fibers as a reinforcement, and fluoro resin powder to improve the sliding characteristics. As noted in Applicants’ February 28, 2008 reply, the Office Action contends that Kobayashi discloses the utilization of 5-50 wt. % of titania which overlaps with Applicants’ claimed titanium oxide powder range of 5 to 35 % by mass. [12/28/07 Office Action, p. 3]. The Office Action further contends that the “mere point that Kobayashi et al. call it a “fiber” and not a powder cannot be held sufficient that Kobayashi et al. does not teach the use of said component in the sliding parts.” [3/18/08 Advisory Action, p. 3, item 7].

Applicants respectfully disagree, but notwithstanding the distinction between fibers and a powder, note that Kobayashi merely discloses that the resin sliding part itself contains titania fibers and does not disclose that a wear- and seizure-resistant film containing polyimide or polyamide-imide as a binder resin is formed on a sliding part. Furthermore, Kobayashi does not teach or suggest that the “solid lubricant, the titanium oxide powder and the silane coupling agent [are] being dispersed in the binder resin of the film” as recited in Applicants’ amended claim 1. Moreover, since Araki discusses the incorporation of titanium oxide as a pigment, there

is provided no suggestion or motivation to incorporate the amount of titania fibers utilized by Kobayashi in Araki's composite material.

Accordingly, Araki and Kobayashi - whether alone or in combination - fail to teach disclose, or suggest a "wear resistant and seizure resistant film formed on a sliding part, wherein the film is formed of a coating composition comprising a binder resin, which is polyimide or polyamide-imide, a solid lubricant of polytetrafluoroethylene in an amount of from 15% ... to 100% by mass ..., titanium oxide powder in an amount of from 5% ... to 35% by mass ..., and a silane coupling agent in an amount of from 0.1% ... to 10% by mass based on 100% by mass of the binder resin, the solid lubricant, the titanium oxide powder and the silane coupling agent being dispersed in the binder resin of the film" as recited in Applicants' amended claim 1. Applicants submit claim 1 is patentably distinct from Araki and Kobayashi for at least this reason. Since claims 2-4, 7, and 15-19 depend either directly or indirectly from claim 1 they are asserted to be allowable for at least similar reasons. New claims 20-21 contain the elements recited in claim 1 and, hence, are also deemed to be in condition for allowance. Consequently, the Section 103 obviousness rejection should be withdrawn.

Applicants have chosen in the interest of expediting prosecution of this patent application to distinguish the cited documents from the pending claims as set forth above. These statements should not be regarded in any way as admissions that the cited documents are, in fact, prior art. Furthermore, Applicants have not specifically addressed the rejections of the dependent claims. Applicants respectfully submit that the independent claim from which they depend is in condition for allowance as set forth above. Accordingly, the dependent claims also are in condition for allowance. Applicants, however, reserve the right to address such rejections of the dependent claims in the future as appropriate.

**CONCLUSION**

For the above-stated reasons, this application is respectfully asserted to be in condition for allowance. An early and favorable examination on the merits is earnestly solicited. In the event that a telephone conference would facilitate the examination of this application in any way, the Examiner is invited to contact the undersigned at the number provided.

THE COMMISSIONER IS HEREBY AUTHORIZED TO CHARGE ANY ADDITIONAL FEES WHICH MAY BE REQUIRED FOR THE TIMELY CONSIDERATION OF THIS AMENDMENT UNDER 37 C.F.R. §§ 1.16 AND 1.17, OR CREDIT ANY OVERPAYMENT TO DEPOSIT ACCOUNT NO. 13-4500, ORDER NO. 5000-5167.

Respectfully submitted,  
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